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combines the effect of all colors and is utilized in the electric light bath. The skin is a poor conductor of heat, but readily transmits light and radiant energy. Then, in the deeper tissues, it becomes changed into heat. Its physiological action depends upon the heat and chemical rays coming in contact with the substances that are resistant to their passage and thus transforming them into heat and light energy.

SCIENCE APPLIED TO PRACTICAL NURSING[1]

By MARGARET DIETER

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As this paper is to some extent argumentative, it seems best to begin with a definition of terms. In the first place, our present day connotation of the word science calls up a picture of laboratories, special equipments, men absorbed in their profession. Most of us, too, are reminded of the fine exactness and careful accuracy with which these men work. Zoölogy, botany, physics, chemistry, are thought of most commonly as their field of labor, but they are really only a small part of the domain of "science." Science fulfilling its ancient Latin meaning of "knowledge" has come to include such studies as psychology, sociology and economics. Even language, in some of its aspects, may be considered as a science.

A few general remarks might be made as to what a student in any course in science is supposed to get as the result of his work. Apart from knowledge of the subject itself, he should have learned that results are best attained by attention to details, close observation, accuracy and finished work. Added to this is the patience which keeps a man hard at work in spite of discouragements. Are not these same qualities necessary in good nursing? Happy, therefore, is she who has served a probationary period, before entering the hospital, in even one science.

In these days, it goes without saying that a nurse's training embraces a certain amount of theoretical study in addition to the purely practical work. The limits of this paper forbid discussion of the bearing of preliminary science study to the student-nurse's anatomy, physiology, bacteriology, etc. We are concerned with practical work entirely, that is to say, the daily floor work of the ward—routine household duties, giving of medicines, serving of meals, dressings, in short, any of the things done to make the patient more comfortable either mentally or physically. Our purpose is to show the relation of sciences studied before or after entrance to the training school to this practical work.

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[1] The following paper was written by a pupil nurse of seven months' hospital experience. She has worked from her own observations only. Therefore, she cannot in any sense be said to have completely covered her subject.

If I were asked to state what preliminary science had been of greatest value to me thus far, I should mention psychology first. Even an elementary course in this subject has much to say concerning suggestion, interest, habit. Patients in the wards offer abundant clinical material for observation, and practice of these very things.

For instance, here is a little Italian, typical of his race in unreasonable passion. His dressing he had always regarded as the dreaded ordeal of the day. He was taught to look upon it as a pleasant means of getting his leg well. In the end, he came to ask if I were going to do it, and regarded it as a high privilege if I allowed him to hold the bandage. I had simply used suggestion, and established his interest in what I was doing. In like manner, from knowing nothing whatever of the use of the tooth-brush he afterward became the first to ask for his "tooth-washing" in the afternoon.

Another instance, trivial though it may seem, is not, I think, without significance. Ether breakfasts are sometimes necessary for some poor unfortunates on the Children's Ward. If a child is told, in answer to his questions, that he is not to have anything to eat that morning, he will possibly be in tears, wondering why. But if he is quietly asked to wait until the doctor gives him permission, he is usually contented. Why? Because his mind is busy with the fact that the doctor, whom he knows, has desired him to wait. You may call it tact, meeting the child on his own level, what you will, it is really the application of fundamental laws of psychology.

Again, abnormal psychology plays its part in the understanding of patients. We have all seen patients who were as much a mental problem as physical. How much easier it is to understand the "whims" of such patients when one has had some light as to the cause of their condition!

Experience in a large general hospital necessarily throws one in contact with people of many races, from many environments, and with many different standards of living. Here is a poor Syrian woman, knowing scarcely a word of English, on the ward for a serious operation. How shall we deal with her? Now-a-days we know that it is not enough to minister to her physical needs alone. She must have more than that.

Again, take the case of a Jew, old, decrepit, and orthodox, to the point that he will not eat meat in the hospital because it is not "Kosher-killed." Here are two Oriental types, and we are Occidentals. It seems to me that a broadly-trained woman, with her sociology and anthropology, is far better able to care for such patients than one to whom they are just cases.

The nurse who is interested in her work is confronted with other problems. A baby has been in the hospital for weeks perhaps, and is, after much effort, ready to be sent home. Home to what? Poor surroundings in a crowded tenement section, and an ignorant mother who may possess the maternal instinct without the intelligence which will enable her to keep the baby well. If we send the child home, there seems little likelihood that it will grow up normal and healthy. To the student of sociology, the after-condition of that child is just as important as its stay in the hospital was to the physician. There are many of these cases on the Children's Ward. I have worked hard with some of them, seen them almost transformed, so to speak, from impossible street ragamuffins to sweet, lovable children. When they go back to their old environment, I often wonder how much has really been gained. They represent one of the important problems of the day, vital not only to themselves, but also to the community and the state.

Furthermore, my work in evolution proves to me that we are products of our environment quite as much as of our heredity, good or bad as one or both may be. Does not that in itself give indication as to my treatment of a patient? Understanding what he is, and why he is so, can I not excuse and forgive him many things which ordinarily would be disgusting and intolerable? If his personal habits are untidy. I can look behind those and appreciate that he alone is not to blame. My next business is to teach him better things.

Turning now to languages, I have found them of the greatest practical benefit. A brief course in phonetics has helped me more than once to understand what was wanted. The very fact that I have studied Hebrew (forgotten as it now is) makes me, in the light of what that study revealed to me of racial characteristics, more sympathetic with our Hebrew friends.

Physiology and zoölogy play their part, also, in the daily duties of the ward. A knowledge of these subjects, from the very beginning of the training, makes one more appreciative of what the doctor is trying to do for the patient. And because you yourself have knowledge, you can coöperate more intelligently with him.

Physics has several interesting applications in ward work. For example, the rubber tubing used in giving salt solution subpectorally is put away in its jar, filled with sterile water. The next time it is to be used, it is a siphon ready at hand. Having experimented with the siphon, I realize vividly why I should so put away the equipment.

When I wish to serve things hot, I am reminded of my experiments with heat, and accordingly serve with a hot dish, so as not to waste some of my heat in warming my utensil. The same rule applies to hot water bags. One can get a great deal of good from water at 125° F., if one stops to see that the hot water bag is warm beforehand. When holding the electric light while the doctor looks at a child's ears, I can puzzle out why he wears a mirror, and why the light must be held just so. The laws of light hold good here, even as they did in the experiments in the college laboratory. Something is happening almost every day which might be drudgery in itself, but which is really interesting when viewed in the light of some science studied before entrance.

Of course, it may be argued that nurses did good nursing in the olden days without all this preliminary work. True, but they might have accomplished even greater results had they had more knowledge. Furthermore, this is an age of specialization, when everything is brought to bear on a subject that may be helpful. Doctors in their professional work are laboring with a precision more careful than ever before. And since a nurse can so easily mar all that the physician is trying to attain, it is only reasonable to demand that she be as broadly educated as possible. In this way, she can be of greater assistance.

To sum up, therefore, I find that my preliminary work in science is making my daily work more interesting. I can care for my patients more intelligently and sympathetically. We are living in a time when social problems are among the great topics of the day. Although the student nurse is not expected to attempt to solve these problems, she cannot help thinking about them, because of the very nature of her work. A nurse with her psychology, sociology and economics, plus three years' daily work in caring for others, ought to be able to take some part in a solution of these questions. She should, therefore, have every aid science can give that she may serve her generation as skillfully and effectively as possible.

MATERNITY CARE FOR THE MODERATELY WELL-TO-DO

By MARY E. M. CARTER, R.N.
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While I was superintendent of a hospital and training school I received a visit one day from an old friend, the mistress of a comfortable home and the mother of two children. She seemed interested in the maternity work of the hospital, and at great length I told her of the many facilities provided for the care of poor mothers and their babies.